

What is claimed is:

1. A method of forming a structure in a housing, comprising:
  - providing said housing having at least first and second openings, said first opening being spaced from said second opening;
  - dispensing into said housing a predetermined amount of casting solution comprising a membrane-forming polymer;
  - exposing said casting solution to a quenching bath in which said polymer is insoluble so as to cause said quenching bath to enter each of said openings in order to precipitate said polymer in said housing;, wherein said precipitated polymer has an aspect ratio of less than about 10.
2. The method of claim 1, further comprising providing a plurality of sorptive particles in said porous polymer.
3. The method of claim 1, wherein said quenching bath enters each of said openings isobarically.
4. The method of claim 1, wherein said quenching bath comprises alcohol and water.
5. The method of claim 1, wherein said quenching bath is a gas.
6. The method of claim 1, wherein said housing is a drain of a well of a multi-well plate.
7. A sample preparation device comprising a housing and a composite structure positioned in said housing, said composite structure having a density such that airflow through said composite structure at 10 psi is less than 51 liters/minute/cm<sup>2</sup>.
8. The sample preparation device of claim 7 wherein the airflow through said composite structure is about 23 liters/minute/cm<sup>2</sup> at 10 psi.
9. The sample preparation device of claim 7, wherein said housing is a drain of a well of a multi-well plate.

10. The sample preparation device of claim 7, wherein said housing comprises at least one support element supporting said composite structure.
11. In a sample preparation device of the type comprising a three dimensional structure comprising a plurality of sorptive particles entrapped in a porous polymer matrix and having an aspect ratio of less than about 10 for capturing solute so as to purify a sample to a predetermined degree after multiple passes of said sample through said three dimensional structure over a predetermined amount of time, the improvement comprising:

forming said three dimensional structure in said device so as to have a sufficient density so that upon application of a driving force, said sample is purified to at least said predetermined degree after only a single pass of said sample through said structure over said predetermined amount of time.
12. The sample preparation device of claim 11, wherein said device comprises a plurality of apertures, each aperture having an open top and an open bottom, and wherein said three dimensional structure is formed in each of said apertures.
13. The sample preparation device of claim 12, wherein each of said apertures consists of multiple holes.
14. The sample preparation device of claim 12, wherein the open top is larger than the open bottom.
15. The sample preparation device of claim 11, wherein said apertures comprise at least one support element for supporting said structure.
16. The sample preparation device of claim 11, wherein said driving force is vacuum.
17. In a method of the type wherein a biological sample containing solute contaminants is purified to a predetermined degree by passing said sample multiple times over a predetermined amount of

time through a three dimensional structure comprising a plurality of sorptive particles entrapped in a porous polymer matrix and having an aspect ratio of less than about 10 to capture in said membrane structure said solute contaminants, the improvement comprising:

providing a three dimensional structure comprising a plurality of sorptive particles entrapped in a porous polymer matrix and having an aspect ratio of less than about 10 and having a sufficient density so as to purify said sample to said predetermined degree by passing said sample through said structure only once over said predetermined amount of time.

18. The sample preparation device of claim 7, wherein said housing is a pipette tip.